

**A PREVIOUSLY UNDESCRIBED CALLIANASSID LARVA FROM THE
COLLECTIONS OF THE NATURAL SCIENCES MUSEUM OF TENERIFE.***

by

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RESUMEN

En el presente trabajo se describe por primera vez una larva de Callianassidae, a partir del examen de colecciones de Decápodos del Museo de Ciencias Naturales de Tenerife, procedentes de arrastres llevados a cabo en aguas atlánticas durante los proyectos pelágicos que el Museo desarrolló en las Islas Canarias (1990-1996) y Cabo Verde (1998). Estos crustáceos son conocidos como “*gambas duendes*” y de adultos viven vinculados a fondos arenoso-fangosos. Los estados larvarios de muchas de las especies del área no se han descrito por lo que, a partir del material de este estudio, se espera realizar nuevas descripciones sobre desarrollo larvario y adultos de especies presentes en las zonas de muestreo.

ABSTRACT

In this work a previously undescribed Callianassid larva from the Tenerife Natural Sciences Museum Crustacea Decapoda collections is mentioned. These collections result from sampling in Atlantic waters during the cruises around Canary (1990-1996) and Cape Verde (1998) islands. The species of Callianassidae are Crustacea named as “*ghost-shrimps*” and when adults they are burrow in soft (sandy and muddy) bottom. The larval stages of many species in these areas are undescribed and it is to be expected that new descriptions can be made from material in the samples, in some cases indicating the presence of adults of species not yet recorded from the sample areas.

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1.- INTRODUCTION

Decapods from plankton samples taken during the TFMCBM/98 Cabo Verde Cruise¹ and from some samples taken in 1991, 1994, 1995 and 1996 off the Canary Islands² (TFMCBM/Canarias) were examined.

The specimens were captured in vertical hauls (C=1000-0m) both diurnal (D) and nocturnal (N) with the same sampling method.

The samples from the Cape Verde Islands contained adults or post-post larval stages of the pelagic Penaeoidea *Gennadas* spp., the Sergestoidea *Sergestes* spp. and *Lucifer* sp., and the Oplophoridae *Acanthephyra pelagica* and *Systellaspis cristata*. Larvae were much more diverse with zoea and megalopa stages of many benthic decapods, including the families Hippolytidae, Alpheidae, Stenopodidae, Palinuridae, Thalassinidea, Diogeneidae, Galatheididae and Brachyura; as well as the pelagic species. Also, no Decapoda very interesting as larvae of *Amphionides reynaudii* (Eucarida: Amphionacea) were found (LINDLEY & HERNÁNDEZ, [7]).

The specimens from the Canary Islands that were examined included adult Penaeoidea and Sergestoidea and larvae of Processidae, Palinuridae and Thalassinidea. Also Stomatopod larvae were identified.

Further examination of some specimens has now started and one of the Thalassinid larva has been found (from a haul of the Lanzarote island, Canary Islands) to differ from any description in the literature. Other specimens of the same infraorder in the Cape Verde Island samples belong to at least two different species.

The larval stages of many species in these areas are undescribed and it is to be expected that new descriptions can be made from the material in the samples, in some cases indicating the presence of adults of species not yet recorded from the sample areas.

2.- A PREVIOUSLY UNDESCRIBED CALLIANASSID LARVA.

The specimen of this study (figure 1) was taken in the Canary Islands in the diurnal sample 24C96D (with a triple no-closing net WP-2 200 μ standard for the mesozooplankton

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with a diameter open mouth 56 cm/by net, 6658 m³ water filtered, between 1000 m depth to surface at the station *TFMCBM00000012* in 28° 49' 02'' N y 13° 56' 01'' W on date September 24, 1996 during a TFMCBM/96 Lanzarote-Cruise (as a part of TFMCBM/Canarias Cruise).

DESCRIPTION: Carapace length excluding rostrum 1.3mm, Carapace length including rostrum 3.9mm, Total length including rostrum 8.2 mm. Rostrum serrate, with dorsal carina which continues up the carapace to behind the posterior margin of the eye sockets (figure 1b). Ventral margin of the carapace is serrate. Antennule and antenna reach to <2/3 of total length of rostrum. Abdominal segments 2-5 with dorsal crests ending in spines. Spine on segment 2 reaches beyond end of segment 4. Dorsal crests on segments 3-5 serrate. Dorsal spine on segment 6. Telson with posterior margin more or less straight with median spine with 18 spines on either side, spine lengths the spines 1-3 increase in size sequentially with spine 3 being longer than the median spine. Other spines irregular, every 2nd or 3rd spine distinctly longer than adjacent spines, all shorter than median spine (figure 1c).

2.1.- Callianassid species known from area

Callianassa tyrrhena (Petanga) is the only known Callianassid from Canaries (GONZÁLEZ PÉREZ, [5]; UDEKEM D'ACÓZ, [9]). Larvae were described by CANO [2] (See DOS SANTOS, [4]). The antennule and antenna are as long as the rostrum, the spine on the second abdominal segment is only just as long as 3rd segment, segments 3-5 are not serrate dorsally and the telson is strongly convex with median spine longest. Ventral margin of carapace is not serrate.

Necallianassa truncata (Giard & Bonnier) is known from the Atlantic coast of Morocco (UDEKEM D'ACÓZ, [9]). Possible larvae described by DOS SANTOS [4]. The rostrum extends only slightly beyond the end of the antennule and antenna. There are only 5-6 denticles on each ventral margin of the carapace. The spine on the 2nd abdominal segment extends beyond the posterior margin of the 3rd segment but not as far as the end of the 4th segment. There are denticulate dorsal crests on the 3rd -5th segments. Telson with 8+1+8 spines in zoea II onwards, 4th spine the longest, similar in length to the median spine, 5-8 about equal in length.

Callipagurops charcoti de Saint Laurent is known from Azores (UDEKEM D'ACÓZ, [9]. Larvae unknown.

The species listed below were recorded by SAINT LAURENT & LE LOEUFF [8] from the Cape Verde Islands or nearby areas of West Africa. The larvae are undescribed:

Callianassa marchali Le Loeuff & Intès from Senegal

Callianassa convexa Saint Laurent & Le Loeuff from Senegal.

Callichirus pachydactyla (A. Milne-Edwards) from Cape Verde Islands and Senegal.

Callichirus balssi (Monod) from Mauritania, Senegal and Gambia.

Callichirus adamus (Kensley) from Cape Verde Islands, Mauritania and Senegal.

Callichirus intesi Saint Laurent & Le Loeuff from Senegal.

Callichirus monodi Saint Laurent & Le Loeuff, from Senegal

Paracalliax bollorei de Saint Laurent from Mauritania.

2.2.- Larvae of unknown adults.

A larva, Callianassidae SL16 was described from Portuguese waters (DOS SANTOS, [4]). Only the 1st zoea was described. Rostrum has long spines at tip (not serrate along whole length). The ventral margin of carapace is denticulate. Spine on 2nd abdominal segment extends beyond posterior margin of segment 4. Dorsal crests on segments 3 and 4 are serrate on posterior part only. The spine on segment 5 is serrate. The telson has 9+1+9 spines

A larva from the Celebes Sea described by BATE [1] as *Oodeopus longispinus* seems to be the closest description to the present specimen but at the next developmental stage with setose endopodites on the uropods. The serrate crests on abdominal segments 3-5 are serrate on the posterior part only. The larval genus *Oedopus* included the whole range of Axiid and Callianassid zoeas (GURNEY, [6]). DAKIN AND COLEFAX [3] illustrate the abdominal segments and telson of a very similar Thalassinid larval species from New South Wales (Australia). This differs from the present specimen except in size and details of the telson. Dakin and Colefax's stage III (spines on the endopodite of the urosome indicate that, like *O. longispinus* it is a stage later than the present specimen) has a rostrum 5.3mm in length. The differences in the telson may have been a due to the different stages of development. However *O. longispinus* was taken in.

NONE OF THE LARVAE DESCRIBED BY GURNEY [6] HAD THE COMBINATION OF FEATURES EXHIBITED BY THE PRESENT LARVA.

2.3.- Other Axiidae-Callianassidae larvae in samples

Four Axiidae Callianassidae larvae (larval genus *Oodeopus*) were extracted from Cape Verde sample code 24C98D and one from 24C98N.

Three specimens from 24C 98D and one from 24C 98N were very close to Thalassinid D. I of GURNEY [6], also *Oodeopus intermedius* of BATE [1]. These larvae have single spines but no dorsal crests on abdominal segments 2-6. The rostrum is serrate except for the distal part which is slender and smooth. There are a few teeth on the anterior ventral margin of the carapace. The posterior part of the telson tapers to a large median spine. Gurney recorded these larvae from many stations including 14°39'N 25°51'W. He comments " If it were not for the fact that leg 2 is chelate, this form might well be claimed as the larva of *Enoplometopus*, especially as it was taken in the same collections." The taxonomic position of *Enoplometopus* appears to be uncertain, GONZÁLEZ PÉREZ [5] lists the genus under Axiidae whereas UDEKEM D'ACOS [9] lists them within the Nephropsioidea.

One specimen from 24C 98D was similar to Gurney's Thalassinid D. VI, with a single spine on abdominal segments 2 and 6 and paired spines in segments 3-5 but no dorsal crests. The telson is narrow with a convex posterior margin with a stout median spine. This type of larva was found off the east coast of Africa at 21° 44'S and 14° 42'S (Gurney [6]). Both of these species are within groups that Gurney considered were almost certainly Axiidae.

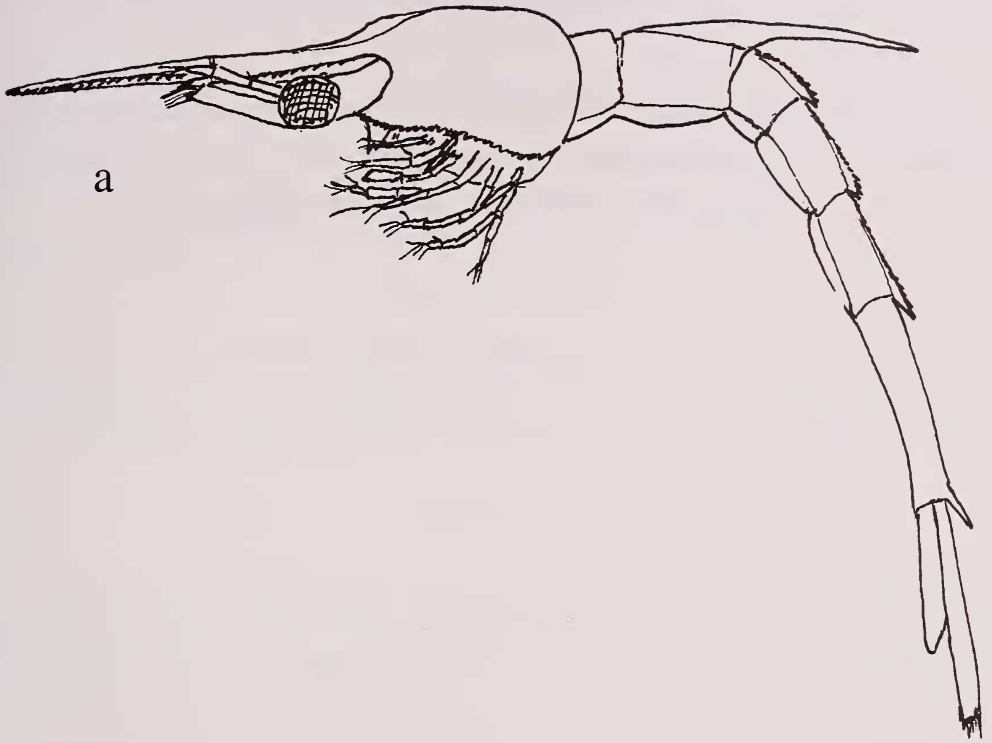
3.- REFERENCES

- [1].- BATE, C.S., 1888. Report on the Crustacea Macrura collected by HMS *Challenger* during the years 1873-1876. *Rep. Scient. Res. Voy. Challenger, Zool.*, 24: 1-192.
- [2].- CANO, G., 1891. Sviluppo postembryonale della *Gebia*, *Axius*, *Callianassa* et *Calliaxis*; Morfologia dei Thalassinidae. *Boll. Soc. Nat. Napoli*, 1, v: 5-30.
- [3].- DAKIN, W.J. & A. N. COLEFAX, 1940. *The plankton of the Australian coastal waters off New South Wales*. Part 1. Euphausiacea and Decapoda. *Monogr. Dep. Zool. Univ. Sydney*. 1: 1-215.
- [4].- DOS SANTOS, A., 1999. Larvas de Crustáceos Decápodes ao largo da costa Portuguesa. Tes apresentada à Faculdade de Ciência da Universidade de Lisboa para a obtenção do grau de Doutor. 1-278.
- [5].- GONZÁLEZ PÉREZ, J.A., 1995. Crustáceos Decápodos de las Islas Canarias. *Publicaciones Turquesa*. 1-282

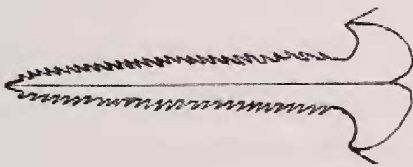
- [6].-GURNEY, R., 1938. Larvae of Decapod Crustacea. Part V: Nephropsidea and Thalassinidea. *Discovery Rep.* 17, 291-344.
- [7].-LINDLEY, J. A. & F. HERNÁNDEZ (in press). The occurrence in waters around the Canary and Cape Verde Islands of *Amphionides reynaudii*, the sole species of the order Amphionidacea (Crustacea:Eucarida). *Revista de la Academia Canaria de las Ciencias*.
- [8].-SAINT LAURENT, M. DE & P. LE LOEUFF, 1979. Decapod Crustacea: Thalassinidea. 1. Upogebiidae and Callianassidae. *Ann. Inst. Oceanogr. Paris.* 55 (suppl.) 29-101.
- [9].-UDEKEM D'ACÓZ, C. d'.1999. Inventaire et distribution des Crustacés Décapodes de l'Atlantique nord-orientale, de la Méditerranée et des eaux continentales adjacentes au nord de 25°N. *Patrimoines Naturels (Mnhn/Spn)* 40: 1-383.

4. ACKNOWLEDGEMENTS

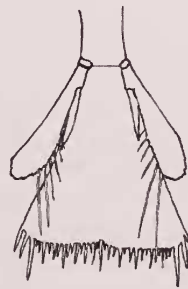
Special mention to our colleagues in all cruises, Dr. Sebastián Jiménez and Mr. Pedro Ortega for their collaboration during the Atlantic cruises.



a



b



c

Figure 1. a.- Lateral view of the whole specimen; b.- Dorsal view of the rostrum; c.- The telson.